

PROPOSED LEAKING UST (LUST) CASE CLOSURE

The Arizona Department of Environmental Quality (ADEQ) is considering closure of the following leaking underground storage tank (LUST) cases:

LUST Case File # 5158.01-.03

Facility ID # 0-003721

Navajo County

Phillips 66 Company No. 014880

405 Navajo Boulevard

Holbrook, Arizona 86025

According to the LUST file, a UST system was installed in approximately 1968. The UST owner/operator was the Phillips Petroleum Company (Phillips 66). In January 2000, Phillips 66 removed one 550-gallon waste oil UST and abandoned in place two 6,000-gallon gasoline USTs. Soil samples collected during the permanent closure activities indicated a release of petroleum hydrocarbons had occurred. ADEQ assigned LUST release 5158.01 to the waste oil UST, LUST release 5158.02 to the former dispenser islands, and LUST release 5158.03 to the gasoline USTs. The permanent closure and site characterization activities were conducted by SECOR International Inc. (SECOR) on behalf of Phillips 66. SECOR installed groundwater monitoring wells in March 2000. In 2000, Tierra Dynamics Inc. (TDI) installed numerous monitoring wells in this area of Holbrook for various LUST sites. SECOR submitted a *Site Characterization Report* to ADEQ and recommended completion of a *Corrective Action Plan* (CAP) requesting no further action be taken to address soil contamination with benzene at a concentration exceeding the residential Soil Remediation Level (rSRL). SECOR also proposed using monitored natural attenuation to address dissolved phase contaminants of concern (CoCs) at concentrations that exceeded their applicable Aquifer Water Quality Standards (AWQS). In June 2000, ADEQ stated that the CAP was not needed but soil and groundwater remediation was necessary. Site Characterization was approved in January 2000. Active soil and groundwater remediation using multiphase extraction (MPE) occurred between October 2009 and October 2014. The system was restarted in June 2015 and operated until March 2018.

A site specific risk assessment and detailed file/information search were also completed. On-site groundwater data shows volatile organic compound (VOC) contamination present over applicable AWQS. The remaining CoC contamination in groundwater is 1, 2-dichloroethane (1, 2-DCA) which was found in leaded gasoline. On-site soil confirmation borings collected at each of the three LUST release locations show no CoCs at concentrations that exceed (rSRLs) or minimum Groundwater Protection Levels (GPLs). Soil samples were analyzed for all petroleum related CoCs which include VOCs, polyaromatic hydrocarbons (PAHs) and tetraethyl lead (which is found in leaded gasoline) given the operational dates of the UST system. The groundwater flow direction has been historically west. The depth to water in March 2018 was 14 feet below ground surface (bgs).

Based upon the results of remedial activities and site specific information, the above-referenced LUST site is eligible for alternative LUST closure under Arizona Revised Statutes (A.R.S.) §49-1005(E). Arizona Administrative Code (A.A.C.) R18-12-263.04 allows case closure of a LUST site with groundwater contamination above the AWQS or Tier 1 Standards. ADEQ has considered the results of a site specific assessment and the rule specific criteria below:

1. Threatened or impacted drinking water wells: The Arizona Department of Water Resources (ADWR) database search shows there are 406 registered wells within 1/2 mile of the site. There are five registered exempt wells that include the three City of Holbrook municipal supply wells. These wells are located up gradient to cross gradient from the LUST site between 1/4 and 1/2 mile away. The other two registered exempt wells include one well (55-647499) that was registered in 1982 as an unused, capped irrigation well and the other well (55-610748) is listed as a *domestic supply well, but there is no pumping data recorded*. According to the ADWR List of Municipal Water Providers Designated as Having an Assured or Adequate Water Supply dated January 4, 2018, the City of Holbrook is DWR 40-900005.0000. According to the City of Holbrook's Consumer Confidence Report for Calendar Year 2016, their potable water system (AZ0409015) has three active wells which draw water from the C-aquifer in the Coconino Plateau. The C aquifer is the main water bearing aquifer which draws water from a depth of hundreds to 1,500 feet bgs. According to the ADEQ Safe Drinking Water database, the City of Holbrook public water system was sampled in 2016 for VOCs and none were reported over laboratory reporting limits. The City of Holbrook was sent a Water Provider Questionnaire and was requested to return it within 30 days. The City did not respond. The soil data indicates that no contamination is present at concentrations that exceed the GPLs. GPLs are concentrations in soil that represent leachability into the groundwater. The soil lithology consists of up to 20 feet of impermeable (fat) clay which overlies fine sand to a depth of 35 feet bgs.

2. Other exposure pathways: Confirmation soil borings were installed at the three LUST release areas. No CoCs were found at concentrations that exceed applicable rSRLs. Incidental dermal contact with the groundwater is considered *de minimis* risk. The groundwater contamination is limited to on-site and does not impact off-site potential receptors. There are two daycare facilities identified as sensitive receptors within 1/4 mile of the site.

3. Characterization of the groundwater plume: Four on-site monitoring wells were installed in March 2000. 1, 2-DCA has been detected at concentrations that exceed the AWQS since then. Historic groundwater data shows that methyl tert butyl ether (MTBE) contamination was present over applicable regulatory standards in MW-1 and MW-4, and benzene was present over applicable regulatory standards in MW-2, MW-3 and TDI-19. None of these CoCs have been present in groundwater over applicable regulatory standards since 2015. It is noted that monitoring wells MW-1, MW-2, and TDI-19 are located up gradient of the former UST system. There are numerous other LUST sites located within Holbrook. 1, 2-DCA in the groundwater came from several LUST sites, many of which are already closed. The 1, 2-DCA groundwater contamination appears to be widespread in this area of Holbrook.

4. Groundwater plume stability: Groundwater plume stability is demonstrated by the remaining VOC contamination present over a regulatory standard in groundwater is limited in areal extent as demonstrated by the data in the on-site monitoring wells. Concentration trend analysis was also conducted using the Mann-Kendall Statistical Test. Groundwater data between February 2014 and February 2018 was used. The Mann-Kendall analysis indicates that the dissolved phase concentration of 1, 2-DCA at MW-1 and MW-4 exhibit a decreasing trend. The concentrations in the others wells exhibit a stable or no trend. Concentrations of dissolved phase benzene and MTBE have consistently been trending downward since the permanent closure of the UST system in 2000. The depth to groundwater has increased approximately four feet between January 2000 and February 2018. The 1, 2-DCA contamination appears to be trapped in the clay layer, and dissolves into the groundwater depending on the depth of the groundwater. Historic groundwater data shows that 1, 2-DCA contamination in well TD1-152 showed 1, 2-DCA contamination present below the AWQS.

5. **Natural Attenuation:** The data indicates that natural attenuation is occurring based on the decrease in groundwater concentrations of the other CoCs. It is noted that 1, 2-DCA is a recalcitrant compound so it is persistent in groundwater and may be detected long after other VOCs have been removed from the groundwater.

6. **Removal or control of the source of contamination:** The UST system was permanently closed in January 2000. The waste oil UST and the dispenser/piping system was removed, and the gasoline USTs were closed in place. Both contaminated groundwater and soil has been removed or controlled through active remediation. MPE operations recovered approximately 15,028 pounds (roughly 2,147 gallons) of volatile fuel hydrocarbons (VFH). During the initial MPE operation between October 2009 and October 2014, the system also recovered 4,975 gallons of hydrocarbon impacted water. The system was shut down due to a diminished VFH recovery rate of less than one pound per day.

7. **Requirements of A.R.S. §49-1005(D) and (E):** The results of the corrective action completed at the site assure protection of public health, welfare and the environment, to the extent practicable, the clean-up activities completed at this site allow for the maximum beneficial use of the site, while being reasonable, necessary and cost effective.

8. **Other information that is pertinent to the LUST case closure approval:** The facility and LUST files were reviewed for information regarding prior cleanup activities, prior site uses and operational history of the UST system prior to removal.

Groundwater data for MW-1 (up gradient of LUST release)

Date	1,2-DCA AWQS is 5 µg/L	Depth to water (Feet)
4/20/00	79	10.21
2/17/04	57	10.97
5/16/05	33	11.12
3/27/06	35	11.89
5/30/07	57	11.70
5/20/08	65	11.25
5/29/09	51	11.73
5/4/10	36	12.44
6/14/11	66	12.18
6/12/12	62.3	13.09
12/30/13	64.9	13.28
11/11/14	86.3	13.64
10/12/15	54.4	13.60
2/3/16	42.8	13.39
8/17/16	35.1	13.88
11/16/16	52.3	13.95
2/23/18	26	14.35

Groundwater data for MW-2 (up gradient of LUST release)

Date	1,2-DCA AWQS is 5 µg/L	Depth to water (Feet)
4/25/00	100	10.19
2/17/04	250	11.36
5/16/05	180	11.20
3/27/06	410	12.07
5/30/07	260	11.75
5/20/08	270	11.58
5/29/09	310	11.58
5/4/10	280	12.52
6/14/11	79.2	12.23
6/12/12	328	12.62
12/30/13	401	13.15
11/11/14	278	13.60
10/12/15	297	13.73
2/3/16	189	13.59
8/17/16	39.8	13.59
11/16/16	17.4	14.08
2/23/18	6.7	14.37

Groundwater data for MW-3

Date	1,2-DCA AWQS is 5 µg/L	Depth to water (Feet)
4/25/00	45	10.62
2/17/04	--	--
5/16/05	81	11.59
3/27/06	81	12.49
5/30/07	82	12.15
5/20/08	88	11.68
5/29/09	75	12.20
5/4/10	35	12.93
6/14/11	42.3	12.68
6/12/12	36.2	13.00
12/30/13	61.5	13.75
11/11/14	30.0	14.19
10/12/15	46.1	14.19
2/3/16	38.7	14.05
8/17/16	24.5	14.41
11/16/16	34.0	14.54
2/23/18	35	14.85

Groundwater data for MW-4

Date	1,2-DCA AWQS is 5 µg/L	Depth to water (Feet)
4/25/00	71	9.85
2/17/04	53	11.11
5/16/05	2	10.71
3/27/06	37	11.68
5/30/07	29	11.33
5/20/08	37	10.87
5/29/09	32	11.38
5/4/10	13	12.13
6/14/11	16.0	11.86
6/12/12	16.3	12.20
12/30/13	--	--
11/11/14	70.1	13.37
10/12/15	69.1	13.38
2/3/16	27.7	13.26
8/17/16	29.7	13.60
11/16/16	28.6	13.73
2/23/18	16	14.10

Groundwater data for TDI-19 (up gradient of site)

Date	1,2-DCA AWQS is 5 µg/L	Depth to water (Feet)
4/25/00	--	--
2/17/04	59	11.93
5/16/05	35	11.60
3/27/06	36	12.52
5/30/07	33	12.18
5/20/08	33	11.74
5/29/09	27	12.22
5/4/10	29	12.99
6/14/11	30.4	12.69
6/12/12	33.9	13.02
12/30/13	35.5	13.75
11/11/14	34.2	14.15
10/12/15	29.5	14.16
2/3/16	26.9	14.04
8/17/16	26.4	14.36
11/16/16	28.8	14.50
2/23/18	24	14.82

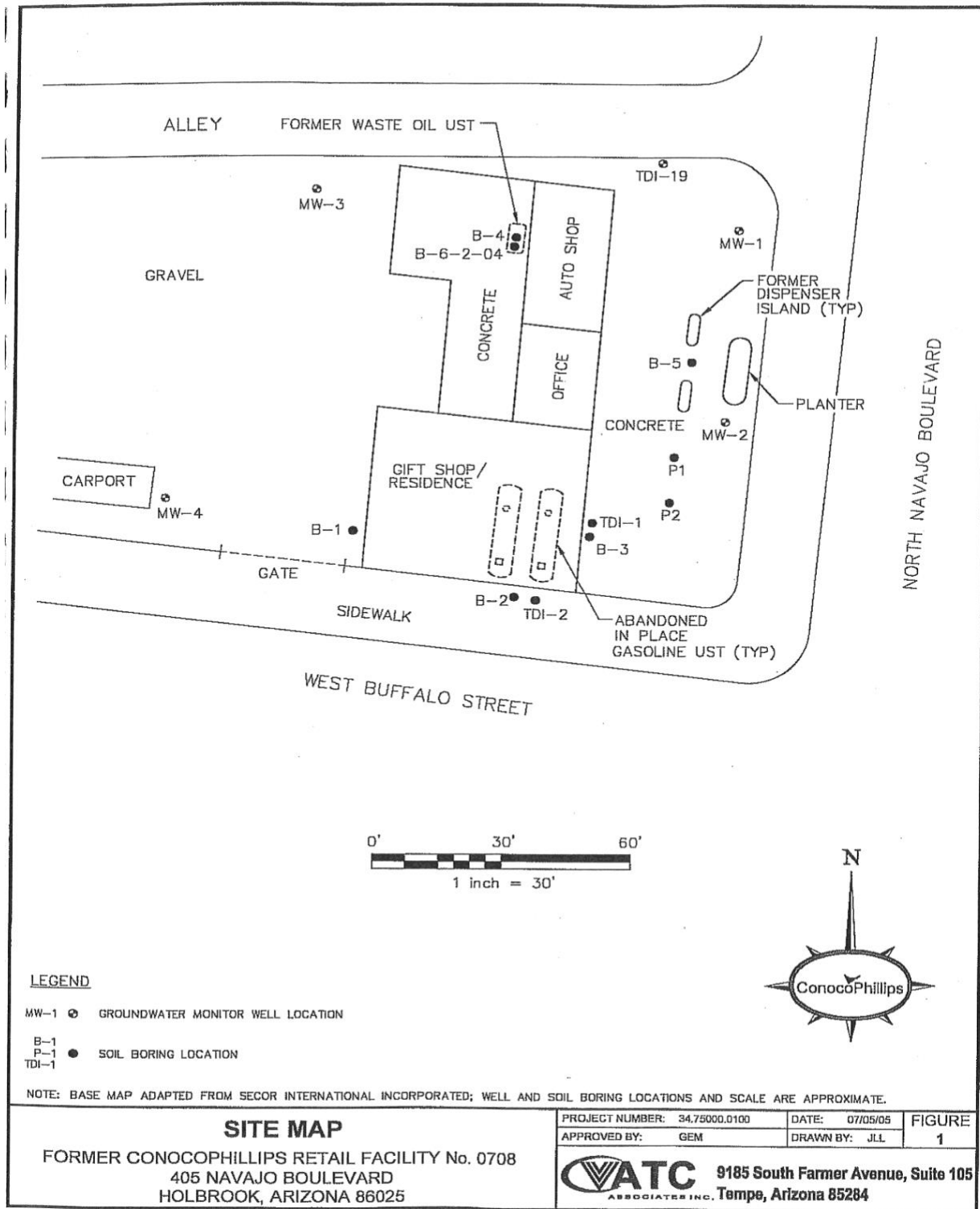
Site specific information concerning this closure is available for review during normal business hours at the ADEQ Records Center <http://www.azdeq.gov/function/assistance/records.html> , 1110 W. Washington St., Suite 140, Phoenix, AZ 85007. ADEQ welcomes comments on the proposed LUST case closure. Please call the Records Center at 602-771-4380 to schedule an appointment. A 30-day public comment period is in effect commencing **July 17, 2018 and ending, August 17, 2018**. Comments should be submitted in writing to the Arizona Department of Environmental Quality, Waste Programs Division, Attention Jorge Espinosa, and 1110 W. Washington Street, Phoenix, AZ 85007.

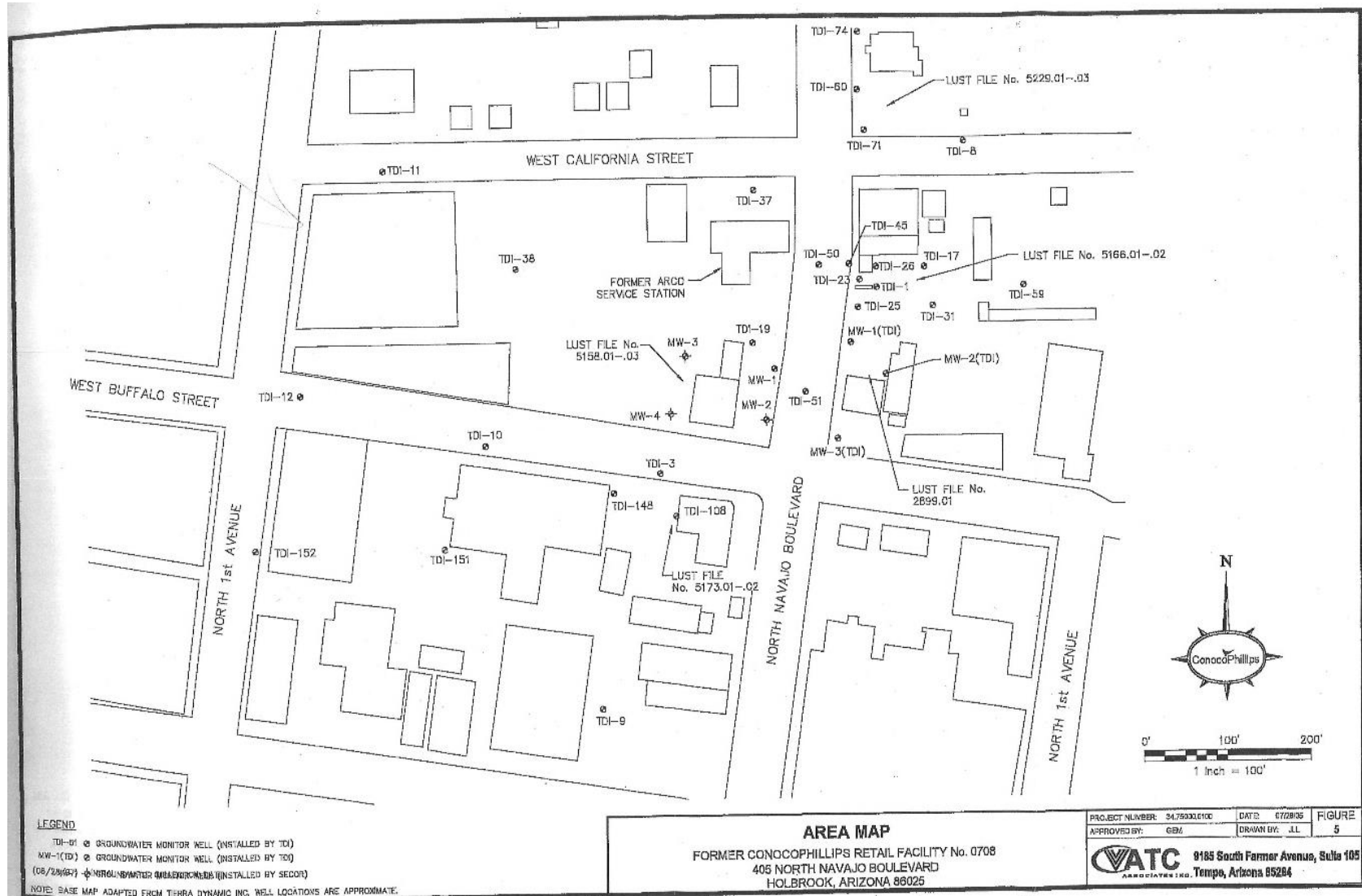
If sufficient public interest is demonstrated during the public comment period, ADEQ will announce and hold a public meeting. ADEQ will respond to written comments following the public comment period. For more information on this notice, please contact the Case Manager, Jorge Espinosa at 602-771-4258 or 800-234-5677 ext. 771-4258 or at je5@azdeq.gov. You may also contact the Sr. Risk Assessor, Debi Goodwin at 602-771-4453 or 800-234-5677 ext. 771-4453 or at dgl@azdeq.gov.

Copies of the cited statutes and rules can be found at:
<http://www.azleg.gov/ArizonaRevisedStatutes.asp?Title=49>, and
http://www.azsos.gov/public_services/Title_18/18-12.html

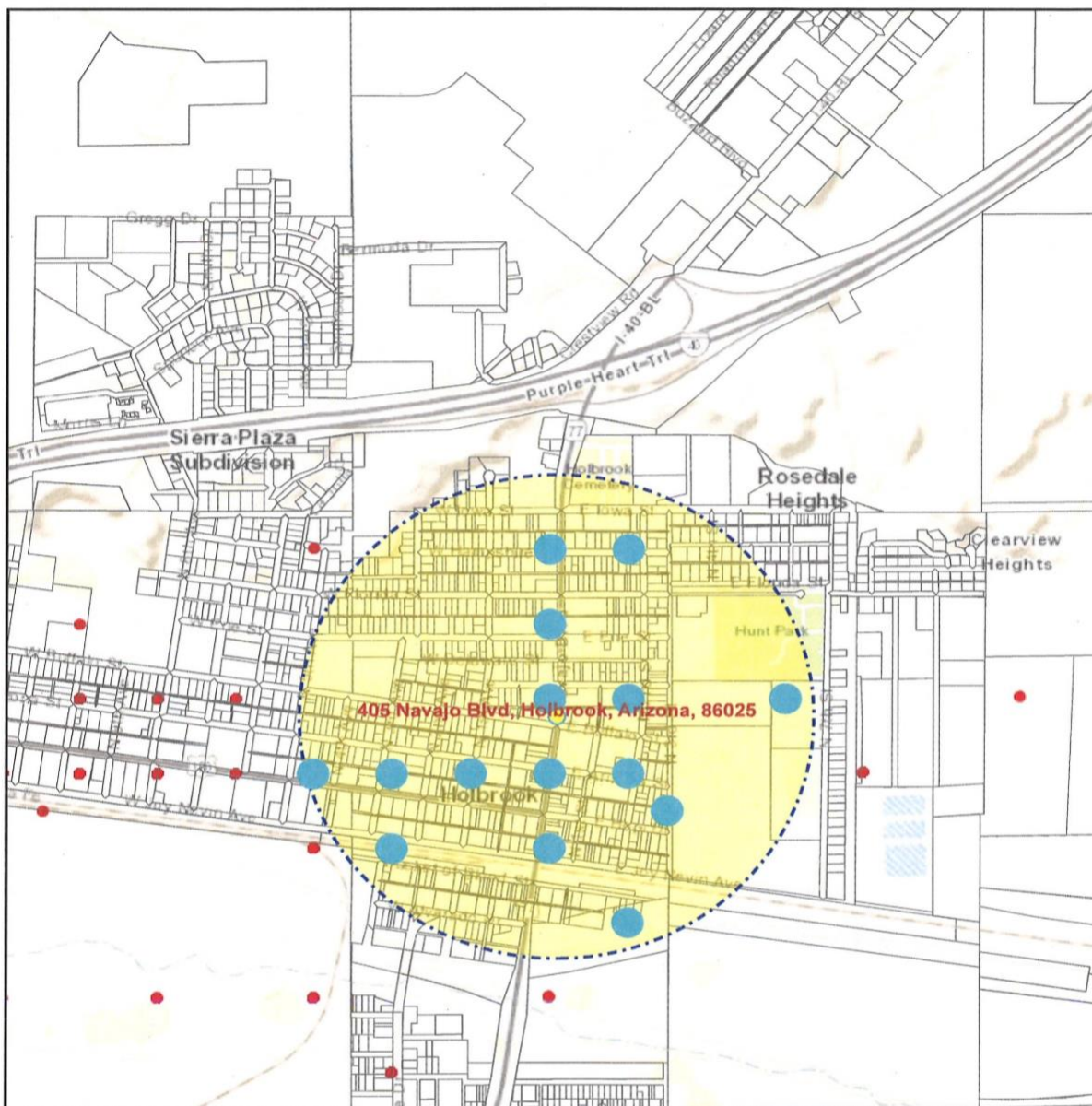
ADEQ will take reasonable measures to provide access to department services to individuals with limited ability to speak, write, or understand English and/or to those with disabilities. Requests for language interpretation services or for disability accommodations must be made at least 48 hours in advance by contacting: 7-1-1 for TDD; (602) 771-2215 for Disability Accessibility; or Ian Bingham, Title VI Nondiscrimination Coordinator at (602) 771-4322 or idb@azdeq.gov.

ADEQ tomará medidas razonables para proveer acceso a los servicios del departamento para personas con capacidad limitada para hablar, escribir o entender Inglés y / o para las personas con discapacidad. Las solicitudes de servicios de interpretación del lenguaje o de alojamiento de discapacidad deben hacerse por lo menos 48 horas de antelación poniéndose en contacto con Ian Bingham, Title VI Nondiscrimination Coordinator al (602) 771-4322 o idb@azdeq.gov.

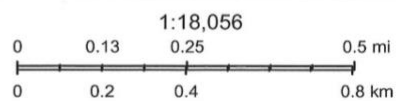




Phillips 66



July 9, 2018



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